

REMARKS

In the Office Action, the Examiner rejected claims 1, and 10-16 under 35 U.S.C. § 102(a) as being anticipated by Reddy et al., U.S. 6,454,004. In addition, the Examiner rejected claims 2, 3, and 7-9 under 35 U.S.C. § 103(a) as being unpatentable over Reddy et al., U.S. 6,454,004 in view of Vickers, Jr., et al., U.S. 6,284,867. Also, the Examiner rejected claims 17-19 under 35 U.S.C. § 103(a) as being unpatentable over Reddy et al., U.S. 6,454,004 in view of Vijn et al., U.S. 6,405,801. Finally, the Examiner stated that claims 4-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Applicants respectfully submit that original claims 1-17 and currently amended claims 18 and 19 should be allowed.

The Examiner objected to claims 18 and 19 which were inadvertently indicated to be dependent from claim 1 rather than from claim 17. In order to correct claims 18 and 19, they have been amended to depend from claim 17.

In connection with the Examiner's rejection of claims 1 and 10-16 under 35 U.S.C. § 102(a) as being anticipated by Reddy et al., U.S. 6,454,004, the Examiner stated that: "Reddy et al. discloses preparing a cement composition comprising hydraulic cement, biodegradable dispersants comprised of polyaspartic acid containing side chains formed by reacting one or more side chain forming chemicals therewith and sufficient water to form a pumpable slurry; placing said cement composition in said zone to be cemented; and allowing said cement composition to set into an impermeable solid mass therein (col. 1, lines 39-50)."

The foregoing statement does not describe what is set forth in U.S. Patent 6,454,004 to Reddy et al. Instead, Reddy et al. states the following in column 3, lines 39-50 of Patent 6,454,004: "The present invention provides improved cement compositions containing

environmentally degradable additives and methods of cementing casing strings in offshore formations penetrated by well bores which meet the needs described above and overcome the deficiencies of the prior art. The improved cement compositions of the invention are basically comprised of a single hydraulic cement, sufficient water to form a pumpable slurry, a water reducing and dispersing additive comprised of polyaspartic acid, a set retarding additive comprised of a lignosulfonate salt, and a compressive strength and set accelerating additive comprised of a water soluble calcium salt.” (emphasis added).

Thus, the Reddy et al. patent discloses a cement composition that is comprised of “hydraulic cement, water, a water reducing and dispersing additive comprised of polyaspartic acid, a set retarding additive comprised of a lignosulfonate salt and a compressive strength and set accelerating additive comprised of a water soluble calcium salt.” The cement composition of Reddy et al. is entirely different from the cement composition utilized in the method of the present invention which comprises “a hydraulic cement, a biodegradable dispersant comprised of polyaspartic acid containing side chains formed by reacting one or more side chain forming chemicals therewith and sufficient water to form a pumpable slurry.”

Similar mistakes were made by the Examiner concerning claims 10 and 11 where the Examiner stated “Reddy et al. discloses the dispersant has a molecular weight in the range of from about 5,000 to about 500,000 and about 10,000 Daltons (stated to be at column 6, lines 29-33); and concerning claim 12 wherein the Examiner stated that “Reddy et al. discloses the dispersant as present in the composition in an amount in the range of from about 0.1% to about 2% by weight of cement therein (stated to be at column 6, lines 33-42).”

It is assumed that the Examiner meant to state the following at column 6, lines 29-33 of Reddy et al. relating to claims 10 and 11: “The polyaspartic acid used preferably has a molecular

weight in the range of from about 500 to about 60,000 and is dissolved in water in an amount of about 40% by weight of the resulting solution.”

As concerns claim 12 of Reddy et al., it is assumed that the Examiner meant to state the following from column 6, lines 33-42 of Reddy et al.: “The aqueous polyaspartic acid solution is included in the cement composition in an amount in the range of from about 0.5% to about 5% by weight of the cement in the composition (the polyaspartic acid is present in an amount in the range of from about 0.2% to about 2% by weight of cement in the composition). Particularly suitable polyaspartic acids are sodium polyaspartate polymers commercially available from Donlar Corporation, Bedford Park, ILL, under the trade name designations “Donlar[®] A-2C, Donlar[®] A-3C and Donlar[®] C-50D.”

The Examiner correctly stated that as to claims 13 and 14, Reddy et al. discloses Portland cement at column 6, lines 4-15.

As to claims 15 and 16, the Examiner indicated that Reddy et al. discloses water present in the composition in an amount in the range of from about 18% to about 110% by weight of cement citing column 6, lines 17-24. Instead, column 6, lines 17-24 of Reddy et al. indicates that water is present in the composition in an amount in the range of from about 30% to about 40% by weight of cement in the cement compositions.

As indicated above, the present invention as claimed in claims 1 and 10-16 describe methods of cementing subterranean zones wherein the cement composition comprises a hydraulic cement, a biodegradable dispersant comprised of polyaspartic acid containing side chains formed by reacting one or more side chain forming chemicals therewith and sufficient water to form a pumpable slurry. The method of cementing and the cement composition utilized in accordance with the present invention as claimed in claims 1 and 10-16 are substantially

different from the method and cement composition described in the patent to Reddy et al., 6,454,004.

“A claim is anticipated only if each and every element as set forth in the claim is found in a single prior art reference.” Verdegaal Brothers v. Union Oil Company of California, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). “The identical invention must be shown in as complete detail as is contained in the ... claim” and all of the claimed elements must be “arranged as in the claim.” Richardson v. Suzuki Motor Company, 868 F.2d 1226, 1236, 9 USPQ 2d 1913, 1920 (Fed. Cir. 1989). The prior art references cited by the Examiner fail to satisfy these requirements. Thus, it is respectfully submitted by the Applicants that claims 1 and 10-16 should now be allowed.

The Examiner rejected claims 2, 3, and 7-9 under 35 U.S.C. § 103(a) as being unpatentable over Reddy et al., U.S. 6,454,004 in view of Vickers, Jr., et al., U.S. 6,284,867. In connection with this rejection the Examiner stated as to claim 2, “Reddy et al. discloses a polyaspartic acid having a side chain forming chemical.” Contrary to the Examiner’s statement, Reddy et al. does not disclose polyaspartic acid having a side chain forming chemical. Instead, Reddy et al. discloses only a water reducing and dispersing additive comprised of polyaspartic acid.

The Examiner also stated that Vickers, Jr. et al. teaches use of a polyamide as a side chain forming chemical to maintain cement in a dispersed state for a longer period of time. While Vickers, Jr. et al. does disclose a substantially non-crosslinked polymer cementitious composition dispersant that has a hydrophilic side chain substituted with polyimide or polyamide backbone units, Reddy et al. does not disclose a polyaspartic acid having side chains and therefore Vickers, Jr. et al. is not applicable to Reddy et al.

As to claim 3, the Examiner stated that Vickers, Jr. et al. teaches the use of ethylene oxide as a side chain forming chemical and teaches the use of polyester, polyamide and polyethylene oxide as side chain forming chemicals. While the methods of the present invention include the use of ethylene oxide, polyesters, polyamides and polyethylene oxides as side chain forming chemicals, the combination of Reddy et al. and Vickers, Jr. et al., taken alone or together, do not suggest the methods of the present invention wherein a biodegradable dispersant comprised of polyaspartic acid containing side chains is utilized in a cement composition.

It would not have been obvious to one having ordinary skill in the art at the time the present invention was made to provide a cement composition including a polyaspartic acid dispersant containing side chains based on Reddy et al. and Vickers, Jr. et al. since Reddy et al. does not disclose polyaspartic acid having a side chain forming chemical and Vickers et al. does not disclose a polyaspartic acid dispersant. Thus, Reddy et al. in view of Vickers, Jr. et al. do not provide a prima facie case obviousness.

Claims 17-19 were rejected by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over Reddy et al., U.S. 6,454,004 in view of Vijn et al., U.S. 6,405,801. In connection with this rejection, the Examiner correctly stated that Reddy et al. discloses examples of additional additives including fluid loss control additives. The Examiner further indicated that the patent to Vijn et al. teaches the use of a hydroxyethylcellulose fluid loss agent.

Claim 17 discloses a group of fluid loss control agents that can be included in the cement composition of the present invention. One of the fluid loss control agents included in the group is hydroxyethylcellulose. Claim 18 calls for the fluid loss control agent when used to be hydroxyethylcellulose. Claim 19 calls for the fluid loss control agent to be present in the composition in a particular amount. It is respectfully submitted by the Applicant that since

Reddy et al. does not disclose a dispersant comprised of polyaspartic acid containing side chains, the fact that Vijn et al. teaches the use of a hydroxyethylcellulose fluid loss agent is moot. Accordingly, it is respectfully submitted that a prima facie case of obviousness based on Reddy et al. in view of Vijn et al. has not been made.

In order to satisfy a prima facie case of obviousness, the prior art must contain some teaching, suggestion or incentive that would have motivated an artisan to modify the reference. See, In re Fine, 837 F.2d 1071, 1074, 5 USPQ 2d 1596, 1598 (Fed. Cir. 1988). The prior art must teach or suggest all of the limitations of the claims without the slightest recourse to the teachings in the application. See, Amgen, Inc. v. Chugai Pharmaceutical Co., Ltd., 927 F.2d 1200, 18 USPQ 2d 1016 (Fed. Cir. 1991). The proper test is whether “the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have a reasonable likelihood of success.” In re Dow Chemical Co. vs. American Cyanamid Co., 837 F.2d 469, 473, 5 USPQ 2d 1529, 1531-32 (Fed. Cir. 1988).

It is respectfully submitted by the Applicants that a prima facie case of obviousness has not been met by Reddy et al., U.S. 6,454,004, by Vickers, Jr. et al., U.S. 6,284,867 or by Vijn et al., U.S. 6,405,801, taken alone or together. Thus, it is respectfully submitted that claims 1-19 are in condition for allowance and such action is respectfully requested.

This is intended to be a complete response to the Office Action mailed on November 10, 2004.

I hereby certify that this correspondence is being deposited in the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment; Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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